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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,739	08/24/2001	Toshihiro Yamamoto	0033-0760P	9901
2292	7590	08/11/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			PIERCE, JEREMY R	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/935,739	Applicant(s) YAMAMOTO ET AL.	
	Examiner Jeremy R. Pierce	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-21 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7 and 9-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 24, 2004 has been entered.

Response to Amendment

2. Applicant's amendment filed on June 24, 2004 has been entered. Claim 3 has been cancelled. Claims 1, 2, and 7 have been amended. New claims 9-21 have been added. Claims 1, 2, and 4-21 are currently pending, with claims 4-6 and 8 withdrawn from consideration.

3. Applicant's amendment is sufficient to withdraw the objections to the drawings set forth in section 3 of the last Office Action because Applicant has removed "substantially continuous film" and "non-woven fabric" from the claims. Also, the 35 USC 112 rejections set forth in sections 6, 7, and 9 of the last Office Action are withdrawn because of removal of the "substantially continuous film" limitation.

Claim Rejections - 35 USC § 102

Art Unit: 1771

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 7, 10-13, 18, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamaguchi et al. (U.S. Patent No. 6,508,897).

Yamaguchi et al. disclose a fibrous structure containing between 10 and 100% binder fibers and cellular cavities (Abstract). The structure may also comprise matrix fibers (column 3, lines 40-44). While air gaps remain in the interior portion of the fibrous structure, a dense layer having a film structure is created by on an outer surface (column 11, lines 53-67 and Figure 15). With regard to claims 7, 18, and 19, the binder fibers have a lower melting point than the polyester matrix fibers because ethylene vinyl alcohol has a lower melting point than polyethylene terephthalate. With regard to claims 10 and 11, Yamaguchi et al. disclose using polyethylene terephthalate as the matrix fiber (column 14, lines 66-67). With regard to claims 12 and 13, the binder fiber may be comprised of various kinds of polyester, polyamide, or polyolefin (column 2, lines 33-58).

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 7, and 9-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fukuhara et al. (WO 99/43903: Since this document is not in English, EP 1,059,393 to Fukuhara et al. will be used as the English equivalent).

Fukuhara et al. disclose a thermal insulating material made of matrix polyester fibers and heat-melting sheath-core composite fiber (page 3, lines 20-29). Applicant discloses in the specification that heating the surface of the nonwoven fabric to melt the heat-melting fibers forms the thin film (paragraph 21). In the heating process disclosed by Fukuhara et al. (page 4, lines 32-44), the surface of the nonwoven fabric would be heated, and the fibers at the surface would melt. Fukuhara et al. also disclose that the surface of the carded webs is fused (page 6, lines 8-9). Although Fukuhara et al. does not explicitly teach the limitation of a thin film being formed, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. matrix fiber in an amount of 40 to 95 percent and binder fiber in an amount of 5 to 60 percent) and in the similar production steps (i.e. two-stage heat treating to fuse the surface) used to produce the insulation material. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, the claimed film layer would obviously have been provided by the

process disclosed by Fukuhara et al. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102. With regard to the new limitation that the interior portion also has air gaps, it is also reasonable to presume that such limitation is also inherent in Fukuhara et al. Nonwoven fabrics contain air between the fibers. Applicant discloses in the specification that air gaps are formed by entangling matrix fibers and binder fibers (paragraph 13). This is the same process Fukuhara et al. uses to make the fabric (page 5, lines 33-39). Also, Fukuhara et al. disclose the density of the product may be varied (page 6, lines 19-27). This would only be possible if air were present within the carded webs. The burden is on Applicant to prove otherwise. With regard to claim 2, a laminate is formed of the nonwoven fabrics by fusing the adjacent heat-melting fibers (page 6, lines 1-4). With regard to claim 7, 9, and 18-21, the heat melting fiber has a lower melting point than the matrix fibers (page 3, line 28). With regard to claims 10, 11, 14, and 15, Fukuhara et al. disclose using polyethylene terephthalate as the matrix fiber (page 3, line 53). With regard to claims 12, 13, 16, and 17, the binder fiber may be comprised of various kinds of polyester, polyamide, or polyolefin (page 4, lines 3-4).

Claim Rejections - 35 USC § 103

8. Claims 2, 9, 14-17, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. in view of Fukuhara et al.

With regard to claim 2, the webs may be carded (column 6, line 19) and Yamaguchi et al. teach using two webs in a single composite (Figure 13). However, Yamaguchi et al. teach using a support layer between the carded webs rather than fusing heat melting fibers between the carded webs. Fukuhara et al. teach that carded webs may be laminated to one another directly by heat treatment (page 6, lines 1-4). It would have been obvious to a person having ordinary skill in the art at the time of the invention to directly fuse the layers of Yamaguchi et al. together in order to create a thicker insulation material without using an extra support layer, as taught to be known by Fukuhara et al. With regard to claims 9, 20, and 21, the binder fibers have a lower melting point than the polyester matrix fibers because ethylene vinyl alcohol has a lower melting point than polyethylene terephthalate. With regard to claims 14 and 15, Yamaguchi et al. disclose using polyethylene terephthalate as the matrix fiber (column 14, lines 66-67). With regard to claims 16 and 17, the binder fiber may be comprised of various kinds of polyester, polyamide, or polyolefin (column 2, lines 33-58).

Response to Arguments

9. Applicant's arguments filed June 24, 2004 have been fully considered but they are not persuasive.

10. Applicant argues that the present inventions focuses the fusion on the exterior portion of the composite material, while causing an interior portion to be formed defining air gaps between the matrix and heat melting fibers. However, the materials and procedures used to create the two products are substantially similar, so that the

Art Unit: 1771

resulting properties can be considered similar also. Fukuhara et al. disclose that the surface of the carded webs is fused (page 6, lines 1-4). This indicates that a film layer is formed. Additionally, Fukuhara et al. disclose the density of the web may be adjusted (page 6, lines 19-27). This can only be possible if there are air gaps within the carded web material. Applicant has not defined the structure of an air gap to be outside the scope of what the Fukuhara et al. reference provides. Additionally, the two-step heating procedure disclosed in Fukuhara et al. is substantially similar to the heating procedure described in Applicant's specification. Since the Examiner has shown a reasonable basis for the properties of the claimed invention to be present in the Fukuhara et al. reference, the burden is on the Applicant to prove that such properties are not present and are not obvious.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent No. 5,458,960 to Nieminen et al.; U.S. Patent No. 4,927,705 to Syme et al.; and U.S. Patent No. 4,966,799 to Lucca et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Pierce whose telephone number is (571) 272-1479. The examiner can normally be reached on Monday-Thursday 7-4:30 and alternate Fridays 7-4.


Art Unit: 1771

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRP

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ELIZABETH M. COLE
PRIMARY EXAMINER